

REMARKS

The Office Action mailed May 28, 2003, and the rejections stated therein, have been considered. In view of the foregoing amendments and the following comments, reconsideration of the rejections is requested.

In each ground of rejection, the Tertinek et al. patent, No. 3,932,006 ("Tertinek") owned by the assignee of this application has been relied upon singly or in combination with secondary references. The rejections will be discussed in the order in which they appear in the Action.

Claim 5 has been rejected under 35 U.S.C. 102(b) as being anticipated by Tertinek which discloses a seal and bearing assembly for a paddle shaft of a drum mixer. The Tertinek seal and bearing assembly includes a housing 30 receiving a bearing and seal assembly in which the housing 30 is illustrated and described as being welded to the wall of the drum. However, the welded connection between the housing 30 and drum end wall has been interpreted as anticipatory of the housing being "removably" attached to the drum and wall. In view of such interpretation, claim 5 has been amended to specifically include fasteners removably mounting said housing on said drum end wall. No suggestion exists in Tertinek that the housing 30 is attached to the drum end wall by fasteners. Accordingly, this limitation

added to claim 5 clearly avoids the anticipatory rejection under 35 U.S.C. 102(b).

In addition, claim 5 now defines the housing, bearing and seal subassemblies as combined into a unitary assembly for removal and replacement as a unitary assembly by another preassembled unitary assembly which is not contemplated in Tertinek. In claim 5, the combined unitary assembly can be quickly and easily removed and a preassembled unitary assembly including the housing, bearing and seal subassemblies quickly and easily replaced. The structure in Tertinek obviously does not contemplate this arrangement inasmuch as housing 30 in Tertinek is welded to the drum end wall which precludes the possibility of quick and easy removal of the unitary assembly and replacement with another preassembled unitary assembly as set forth in claim 5 as amended. Accordingly, reconsideration of the rejection of claim 5 is requested.

Claims 1, 3, 8 and 12 have been rejected under 35 U.S.C. 103(a) as unpatentable over Tertinek in view of Stow which discloses a "seep" hole located in the trunnion assembly. The rejection is based on a conclusion that it would have been obvious to one of ordinary skill in the art to modify Tertinek to include an opening "in a bottom portion between the bearing and seal subassemblies" in view of Stow. However, the disclosure in Stow relates the seep hole to "the trunnion assembly." Such

disclosure does not teach the seep hole being in the bottom portion of a housing, does not teach the opening in general alignment with and in communication with a space between the bearing and seal subassemblies and does not teach an opening that is an elongated arcuate slot type vent opening in a bottom portion of the housing. Accordingly, claim 1 which contains the above specific limitations distinguishes patentably from a resulting structure by modifying Tertinek with a "seep" hole in the trunnion assembly from Stow since the modified structure would not include the specific limitations now included in claim 1. Moreover, even if a seep hole is provided in the trunnion 27 in Tertinek, material that would pass between the seals and shaft would build up within the housing prior to communication with a seep hole in the trunnion assembly.

Claim 3 which was included in this rejection has been amended to depend from claim 2 which was not included in this rejection and therefore claim 3 clearly distinguishes from the modified structure formed by combining Tertinek and Stow. Claim 8 and dependent claim 12 have also been rejected by combining Tertinek and Stow. Claims 8 and 12 also specifically include the shape, configuration and orientation of the elongated, arcuate slot type vent opening and are believed to be patentable over this combination of references in the same manner as claim 1.

Claim 6 has been rejected under 35 U.S.C. 103(a) as unpatentable over Tertinek in view of Whiteman in which a drum support shaft 11 is welded to attachment flange 17 or welded directly to the mixing drum wall 18 or the flange 17 and shaft 11 could be cast integral or attached by means of a friction fit. However, claim 6 distinguishes basically from Tertinek in the same manner as claim 5 and additionally defines the peripheral flange on the housing, fasteners securing the flange to the drum wall and the replacement of the unitary assembly of the housing, bearing subassembly and seal subassembly with a preassembled unitary assembly which includes a housing, bearing subassembly and seal subassembly. Neither Tertinek nor Whiteman suggests or renders it obvious to one of ordinary skill in the art to modify Tertinek as suggested in this ground of rejection.

Claims 2 and 9 have been rejected under 35 U.S.C. 103(a) as unpatentable over Tertinek in view of Stow and further in view of Whiteman. The item disclosed in the Stow publication relates to a seep hole which does not introduce any significant prior disclosure relating to the subject matter of claim 2 with respect to replacement of a unitary assembly with a preassembled unitary assembly. This arrangement is also set forth in claim 9 as amended. The prior art of Tertinek, Stow and Whiteman do not disclose this basic concept of providing preassembled unitary assemblies including a housing that can be bolted to an end wall

of a mixer drum with the housing receiving a bearing subassembly and a seal subassembly with this unitary assembly being replaced as a complete unitary assembly unit. Thus, a worn unitary assembly can be removed and replaced with a preassembled new unitary assembly.

This specific arrangement is believed patentably novel over the prior art even though Whiteman discloses a removable bearing and seal assembly having a ball bearing assembly engaging an outwardly facing shoulder in the drum support shaft 11 which enables the outer bearing to be removed by removing the nut on the end of the paddle shaft 12. This arrangement of components in Whiteman differs substantially from the arrangement of components in the present invention as defined in claims 2 and 9. One of ordinary skill in this art would not find it obvious to modify Tertinek in view of Stow and then further modify the resultant in view of Whiteman. Even though Whiteman discloses a bolted connection of flange 17 to a drum end wall, the relationship between the flange 17, drum support shaft 11, paddle shaft 12 and stationary housing 14 are different from what is shown in Tertinek and what is shown in Stow and different from what is claimed in claims 2 and 9. Applicants submit that one of ordinary skill in this art having these three disclosures available would not find it obvious to modify these structures as proposed in the rejection.

Claims 4, 7, 10 and 11 have been rejected as unpatentable over Tertinek alone and Tertinek in view of Stow and Miyazawa which has been relied upon to show a peripheral groove in a bearing race to enable a pulling device to engage the bearing. While Miyazawa provides a shallow groove on a bearing assembly, the claims under consideration in this ground of rejection set forth that the structure engaged by a bearing puller is a peripheral outwardly extending shoulder or a peripheral rib or flange extending peripherally on the housing so that force exerted on the bearing assembly is by force being exerted on the bearing assembly by the housing. When engaging a bearing race or other bearing assembly component, by engaging a puller with a shallow groove, the force that can be exerted on the bearing assembly without damage to the bearing is limited. Using a bearing puller or other pulling device engaged with a shallow groove as shown in Miyazawa would not produce a force sufficient to remove the bearing from the shaft without possibly damaging the bearing assembly.

In distinction, claim 4 specifically defines the housing as including a peripheral outwardly extending shoulder which enables a bearing puller to engage the peripheral shoulder. This structure clearly distinguishes patentably from the groove 221a in Miyazawa. Further, there is no suggestion or reason to add a groove to the bearing assembly in Tertinek or in Whiteman.

Even if such a groove is used, claim 4 and claim 7, which define an outwardly extending shoulder, still clearly distinguish patentably from the use of such a groove. This distinction is underscored when considering that the groove in Miyazawa is in a bearing assembly component whereas the structure engaged by the puller in claims 4 and 7 enables force to be exerted on the housing which has a relationship to the bearing assembly which would not exist if a groove is placed in an inner race or any other component of the bearing assembly.

Claim 10 has been amended to depend from claim 9 and claim 11 depends from claim 10 and defines the internal shoulder in the housing and the relationship of the bearing assembly to the shoulder which exerts outward force on the bearing assembly in a manner totally different from that which is suggested and taught in the patent to Miyazawa. A person of ordinary skill in this art within the provisions of 35 U.S.C. 103(a) would not find it obvious to utilize groove 221A as shown in Miyazawa in a structure that has already been modified by combining structures from Tertinek alone, or in any combination with Stow, Whiteman or Miyazawa.

New claim 13 has been added to very specifically define the relationship of the housing, bearing subassembly and seal subassembly including the internal peripheral shoulder in the housing that peripherally engages the bearing subassembly and the

peripheral outwardly projecting rib on the housing to enable a bearing puller to exert an axial force on the housing with an internal shoulder in the housing engaging a peripheral axial surface on the bearing of the subassembly with the internal shoulder on the housing including a peripheral axial surface. This enables exertion of axial force peripherally on the bearing subassembly. This arrangement is not suggested in the Miyazawa patent in which force is exerted by a puller on a peripheral groove at an end portion 221 of bearing 22 by providing an annular groove 221a with a bearing puller gripping the bearing 22 by engaging the groove 221a.

The prior art structures are not equivalent to the structure claimed in claim 13 with respect to the association of the housing, peripheral outwardly projecting rib on the housing, the internal shoulder in the housing and its relationship to the bearing subassembly so that the axial force on the bearing is exerted as a peripheral axial force exerted on a peripheral axial surface of the bearing. This enables a sufficient force to be exerted on the bearing assembly to remove the bearing assembly without damage thereby enabling reuse thereof. Miyazawa uses a bearing puller in a very restricted space or area requiring the use of a very small tool and exerts force directly on the bearing the outer race which subjects the bearing to axial force over a very restricted area and exerting such force by a puller to

remove the bearing of Miyazawa could cause damage to a bearing component associated with an inner surface of a housing and the outer surface of a shaft of a mixer drum. A person of ordinary skill in this art having the structures of Tertinek, Stow, Whiteman and Miyazawa available would not find it obvious to select components from these references and combine them in a manner that would be obvious to a person of ordinary skill in the art and equivalent to the arrangements claimed in this application.

In view of the foregoing, Applicants request reconsideration and allowance of this application.

Respectfully submitted,

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